THE AUTOMOTIVE EDGE™

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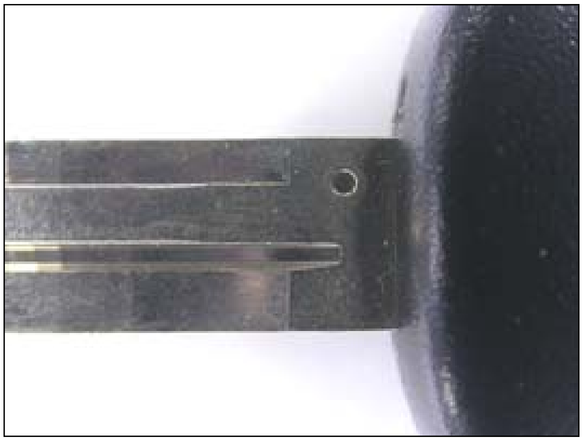
NATIONAL LOCKSMITH
AUTOMOBILE ASSOCIATION™

03.04

2004 Toyota Solara

by Brook Francisco & Michael Hyde of National Auto Lock Service, Inc.

1. The new Toyota Solara is the second generation of the popular sport-coupe first introduced in 1998. The first generation of the Solara had an optional transponder key security system, while the new 2004 model has it standard on all models. Although this car uses the X217/TR-47 keyway with the new 10-cut 50,000-69,000 code series, the immobilizer chip in the key has been changed, so an Ilco Toy-43 BT4 or Jet TR-47 PHT will NOT work for this vehicle. Only the dealer key will work for this car. The locksmith can originate keys for this vehicle if all are lost without the use of the scan tool by replacing or resetting the separate immobilizer ECU (Toyota part #89780-AA010) and the use of the correct dealer key blank (Toyota part #89785-08020—Master and, 89786-08020—Valet key). In this article we will be resetting the chip in the separate Immobilizer ECU with the For Uploading Binary Numbers (F.U.B.N.) IC Programmer unit. Unfortunately, all on-board key registration has been eliminated for this model, so at this time the dealer scan tool is needed to duplicate keys.



2. Notice the small dot on the key blade near the head of the key. This indicates that this car uses a new immobilizer chip, and is not compatible with the older Toyota transponder key.

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Here are the two best websites for Automotive Locksmiths:

www.TheNationalLocksmith.com
Chat, Forums, Editorial,
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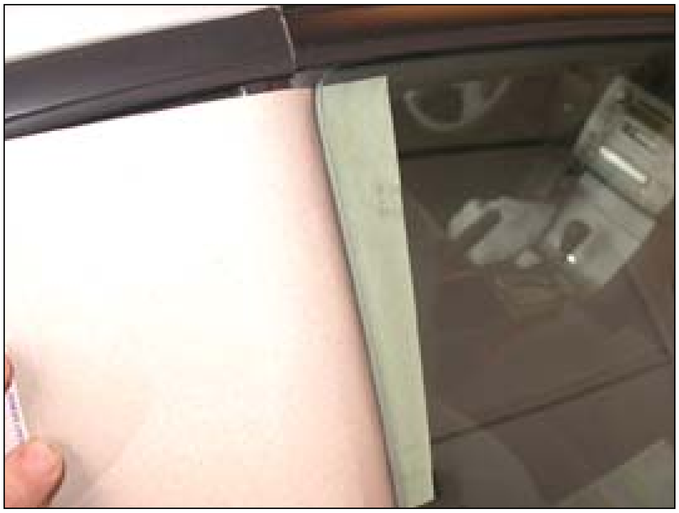
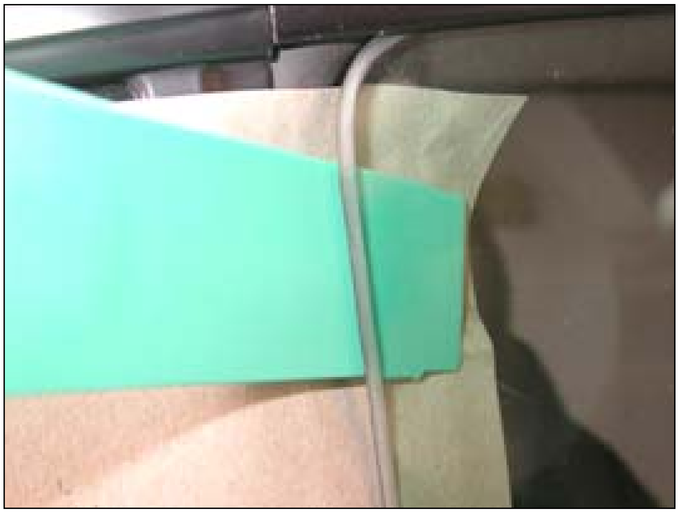
www.Laserkey.com
Product & Technology Sales,
Transponder Information Resources

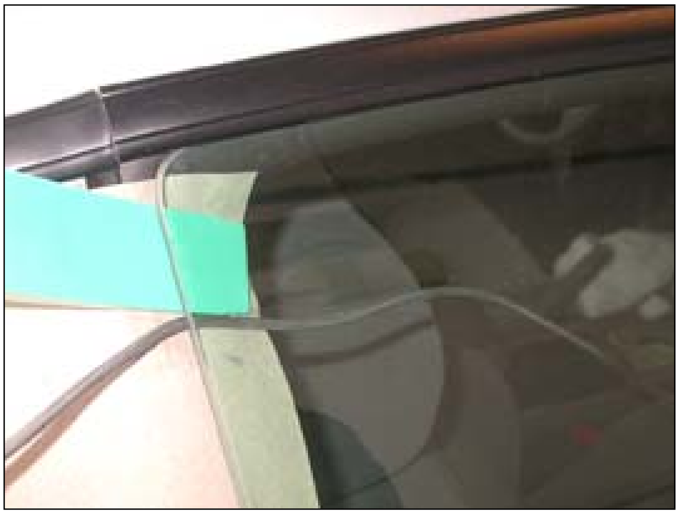


3. Opening the 2004 Toyota Solara is not difficult. Toyota has done a better and better job over the years of shielding the linkage rods in the door, so I elected to use a wedge and long-reach tool to unlock the door using the passenger's manual lock/unlock button.

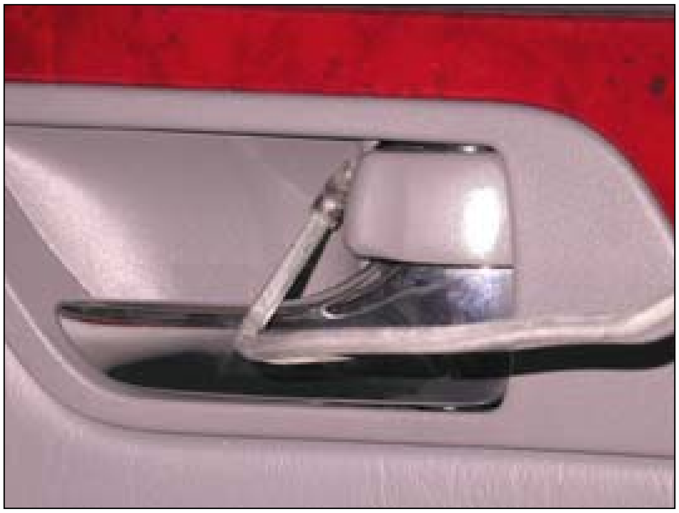
Begin by inserting a thin piece of cardboard between the frameless window and weather stripping. I use a piece of thick paper or thin cardboard to prevent damage to the vehicle door or weather stripping.



4. Next, carefully insert your wedge between the window and vehicle body. This car uses a frameless window, so you will need to be extra careful when performing this step, especially in cold weather.



5. Now insert the long-reach rod in the gap created by the wedge between the door glass and the vehicle body.



6. Guide the reach rod to the manual lock/unlock button.

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1533 Burgundy Parkway
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Phone 630-837-2044
Fax 630-837-1210

E-mail address:
natllock@aol.com

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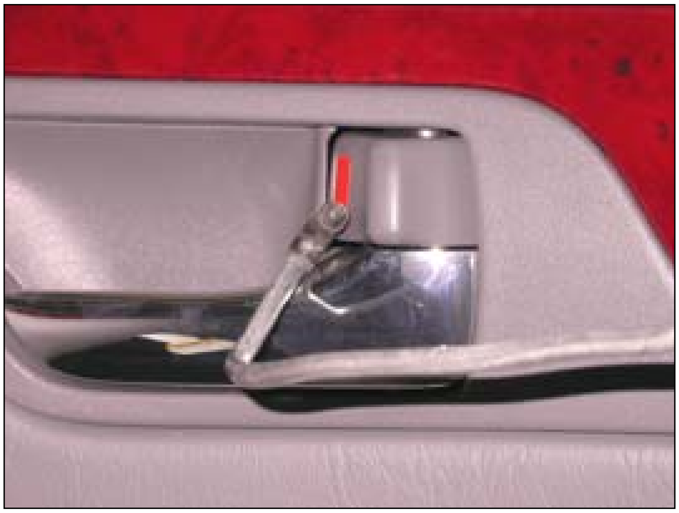
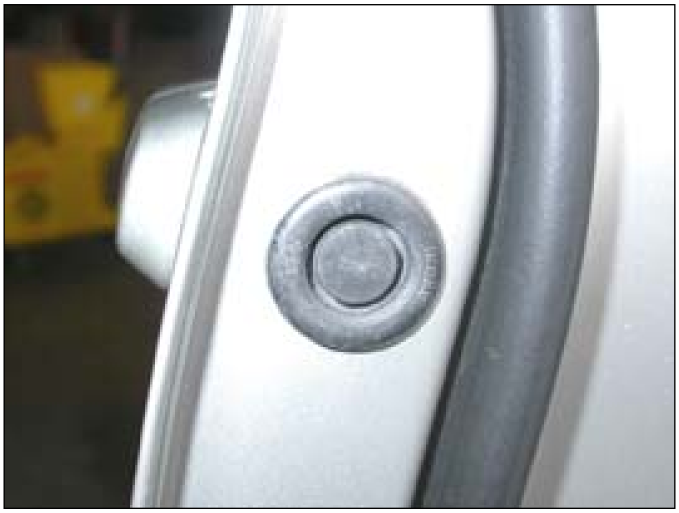
7. Pull the button towards the back of the car to unlock the door.

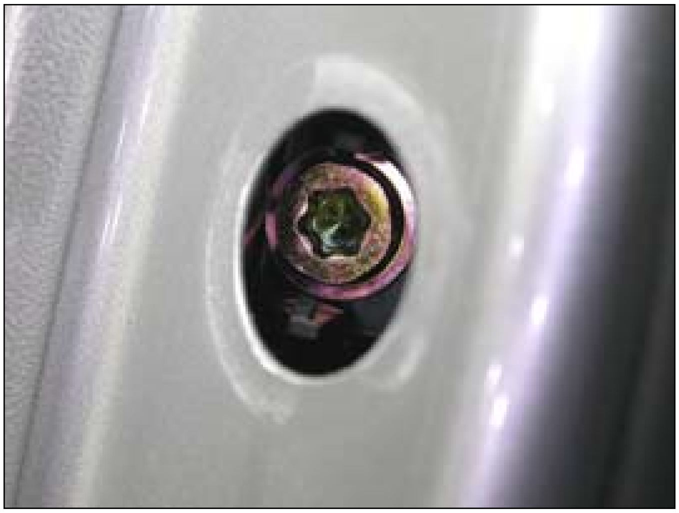


Door Lock Removal/Disassembly

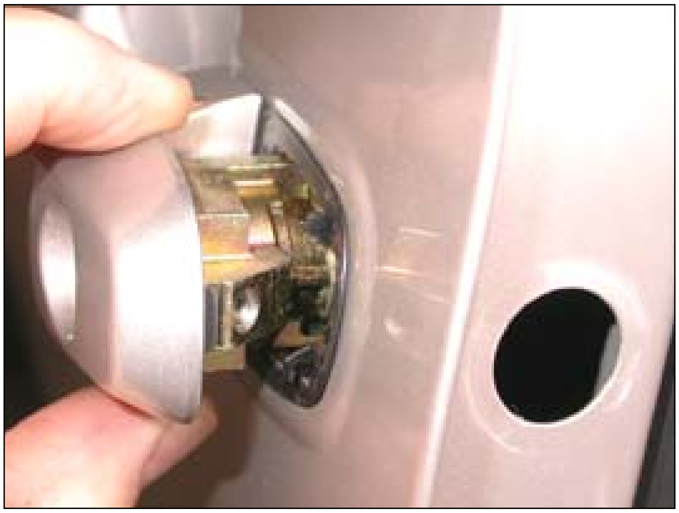
8. The driver side door lock is the only external lock on the 2004 Solara. The lock is easily removed without pulling the door panel. Although there is no code stamped on the lock, a working key can be generated from this lock with only a small progression.



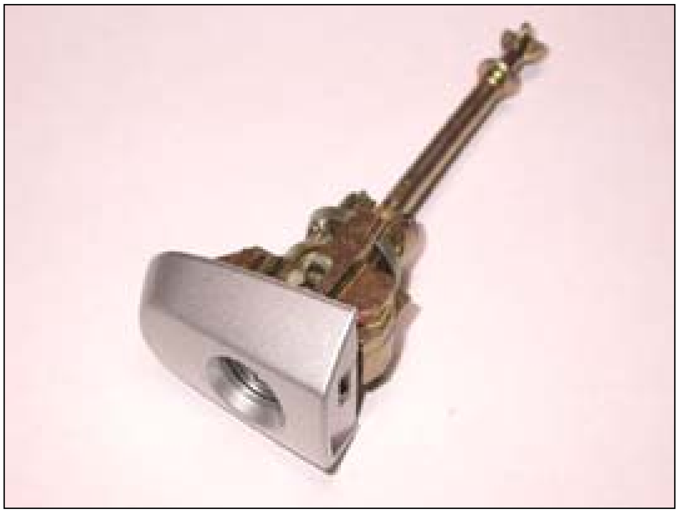
9. On the edge of the driver's door even with lock, you will see a black rubber grommet.



10. Remove this grommet to reveal a Torx 27 screw.

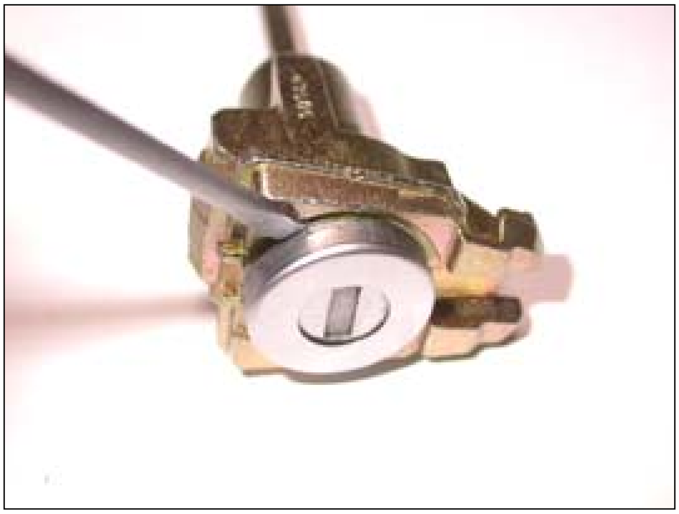


11. After loosening this screw, the cylinder can be removed.

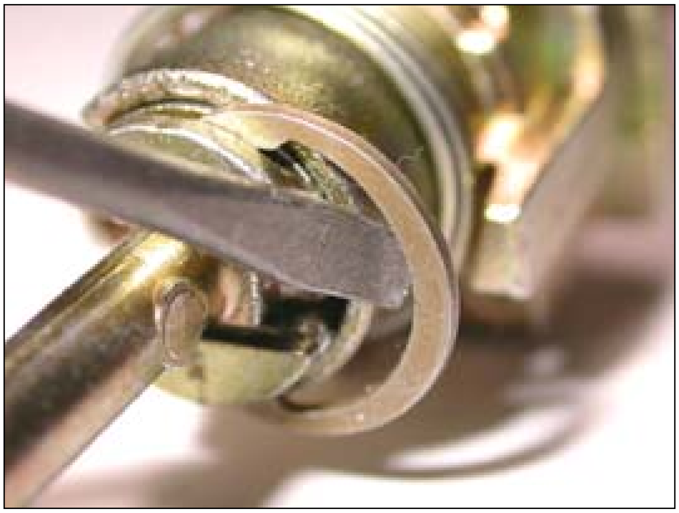


12. The door lock cylinder removed.

13. There is a number "d3505" stamped on the cylinder, but unfortunately this is some type of production code and not a key code.

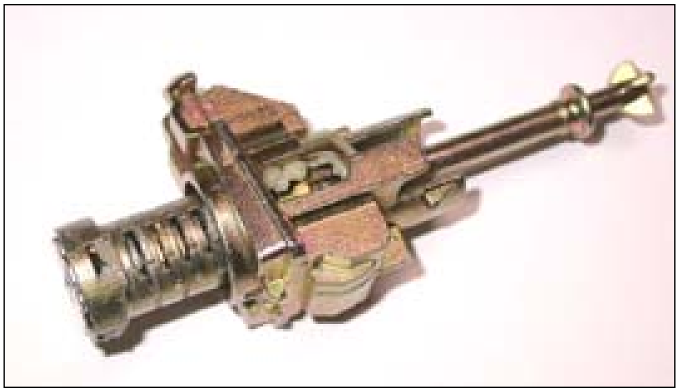


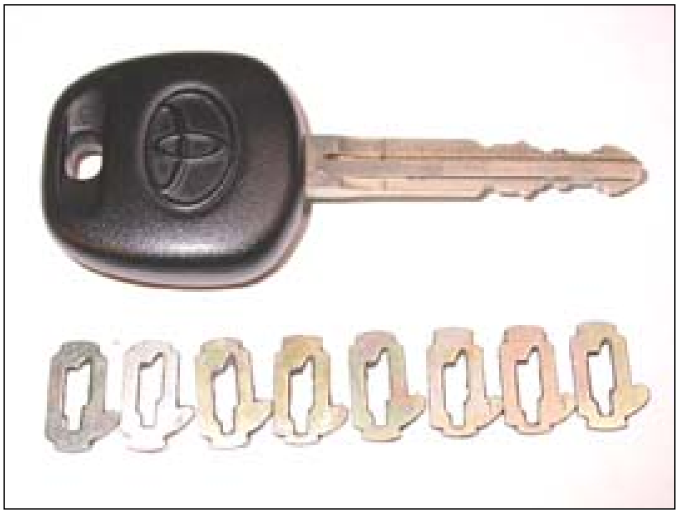
14. To disassemble the door lock, begin by removing the outer plastic trim piece and gently prying off the face cap with a small flat-blade screwdriver. The face cap will be reused.



15. Next, remove the spring and "C" clip at the rear of the cylinder.

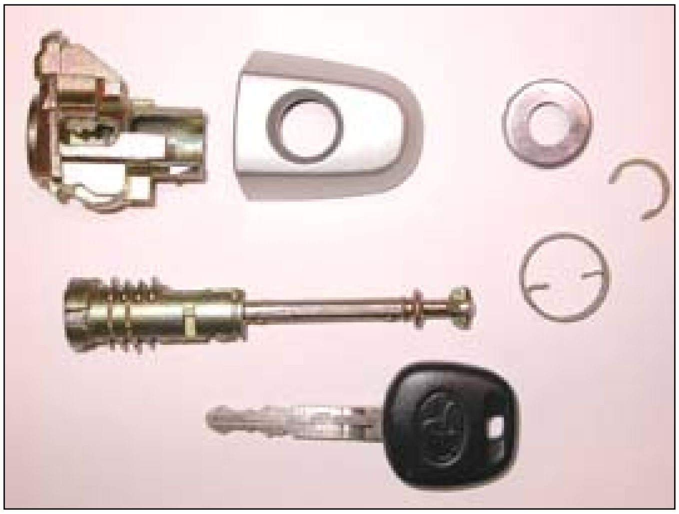
16. The cylinder can now be removed through the front of the housing. A working key is NOT needed to disassemble this lock.





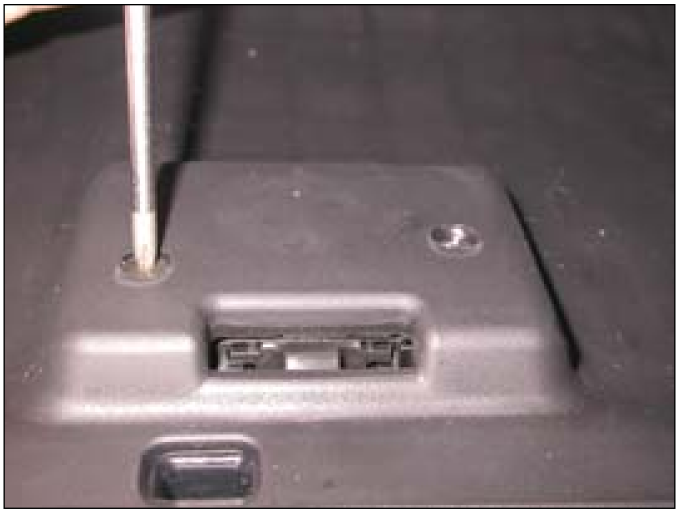
17. We can see that this lock contains tumbler positions 2–10. Remember that Toyota wafers are stamped opposite of their actual cut. The wafers I pulled from the lock were stamped: 34212112. To do the fill in InstaCode, I entered ??21343443 (? = Unknown Cut). InstaCode's Cutting Tree revealed 9 different possibilities that could exist, but only two keys total would be needed for the full progression. The code for this key was 61060, the eighth possibility. The two first missing cuts were a 3 and a 2. A.S.P. part number for this pinning kit is A-30-113

18. The door lock and all components.



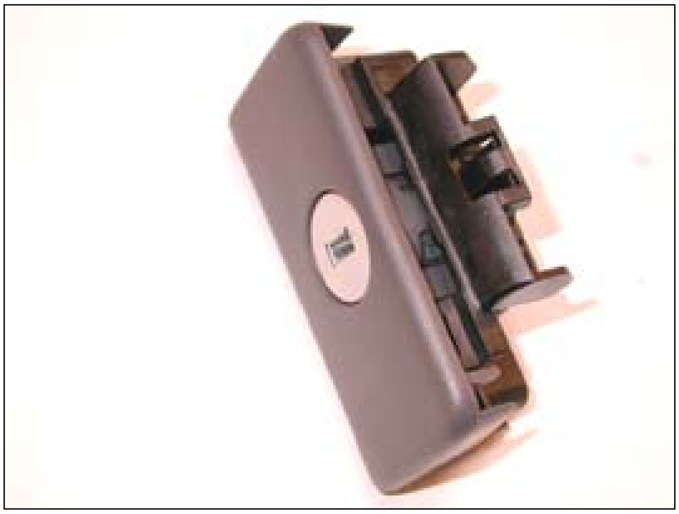
Glove Box Lock Removal/Disassembly

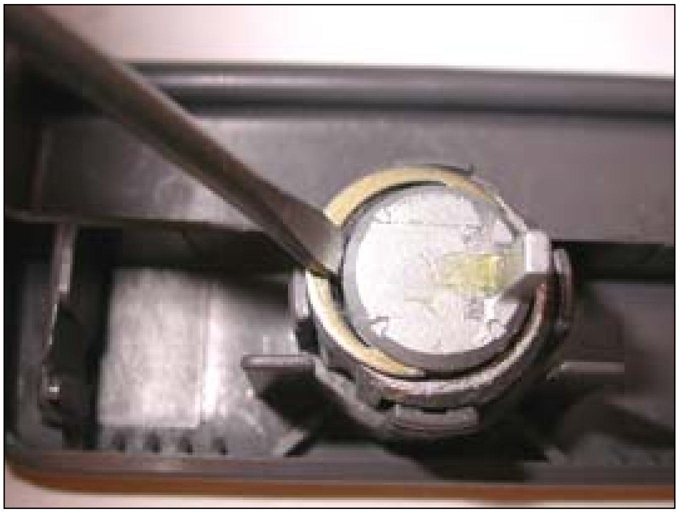
19. The glove-box lock is easily removed and disassembled, but only the last 4 wafers are stored in this lock, so it is pretty useless for any type of progression.



20. Begin by removing the two Phillips screws on the inside of the glove-box.

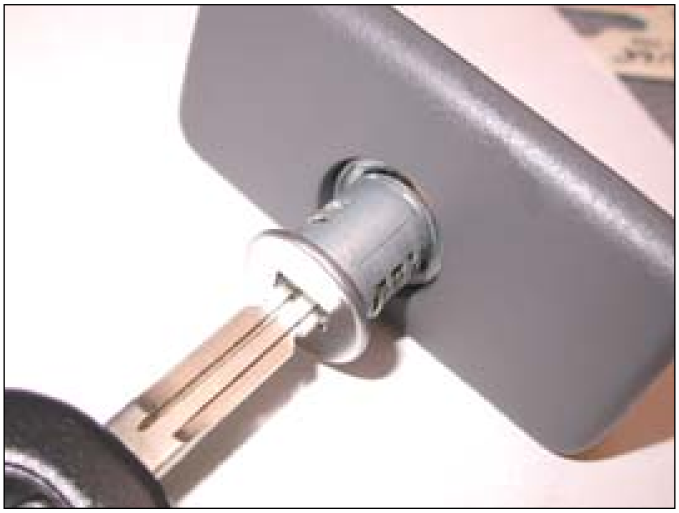
21. You can now remove the glove-box lock.

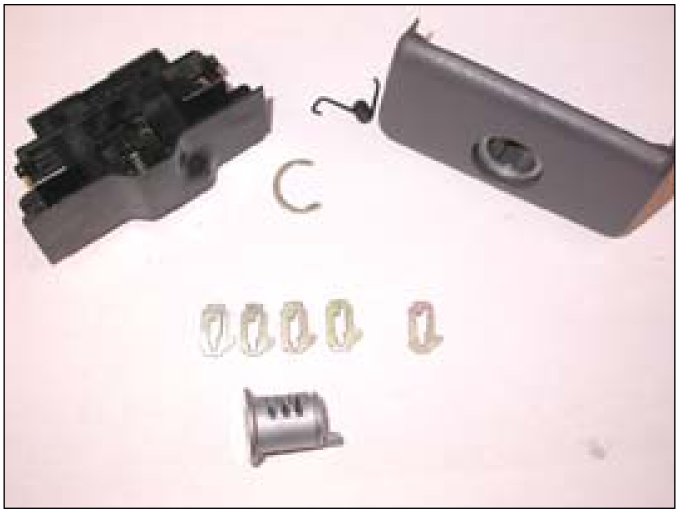




22. To disassemble the lock you will need to pull the handle off of the housing that holds the cylinder. You can then use a small flat-blade screwdriver to remove the "C" clip that holds the cylinder in the housing.

23. The cylinder comes out the front of the lock.





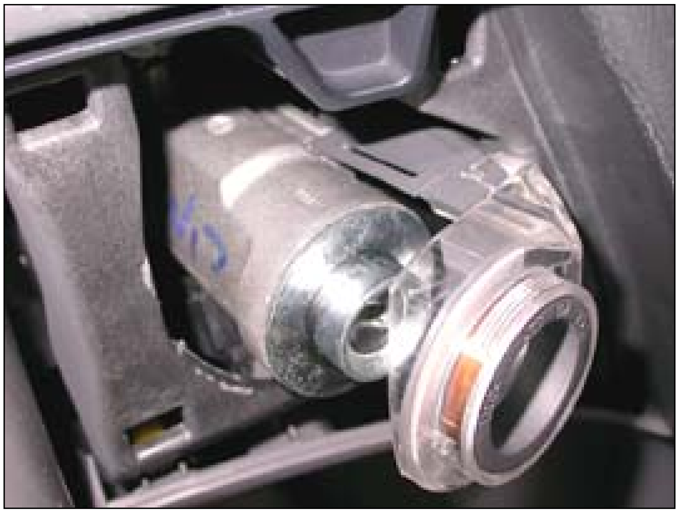
24. The lock and all components. Notice the 5th tumbler to the right is the Valet cut stamped with a "3".

Ignition Lock Removal/Disassembly

25. The ignition lock on this 2004 Solara uses an Active Retainer that is common on most Toyotas. Removal is not difficult if you have a working key to turn the lock to "Accessory".

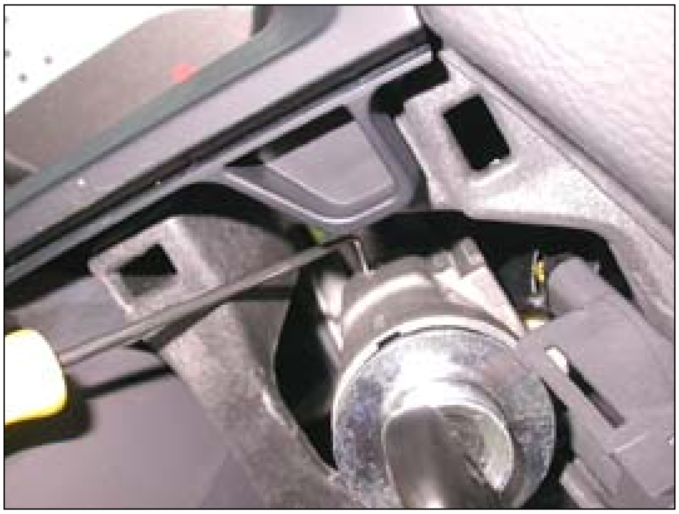
26. Begin by removing the circular plastic trim bezel around the lock.

27. Then use a wedge to carefully pry outward and remove the larger square shaped trim piece.



28. Next, gently pull outward on the illumination ring and transceiver ring. You don't need to remove it completely, just enough to allow the cylinder to be removed.

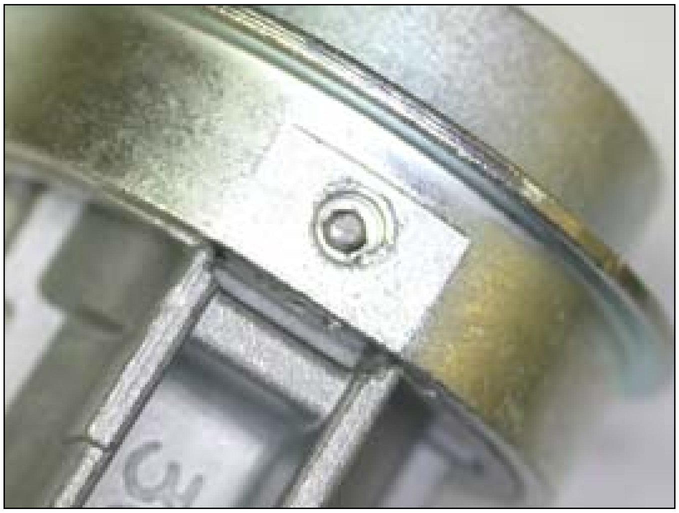
29. With the key in "ACC", you can now use a 90-degree pick to depress the active retainer and remove the cylinder.



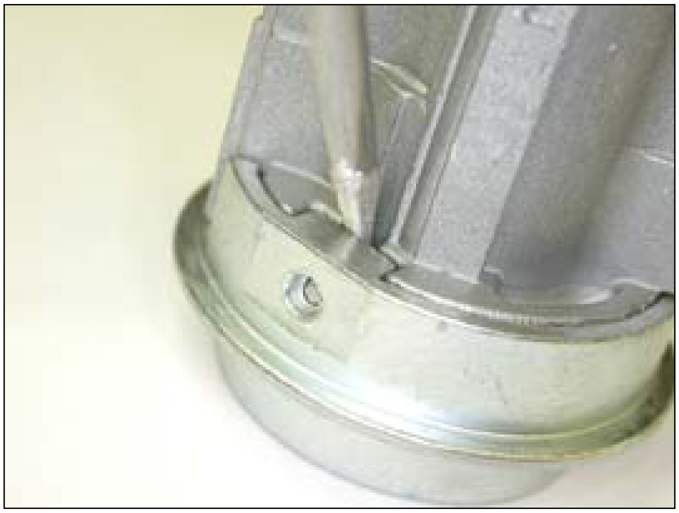
30. The cylinder removed.

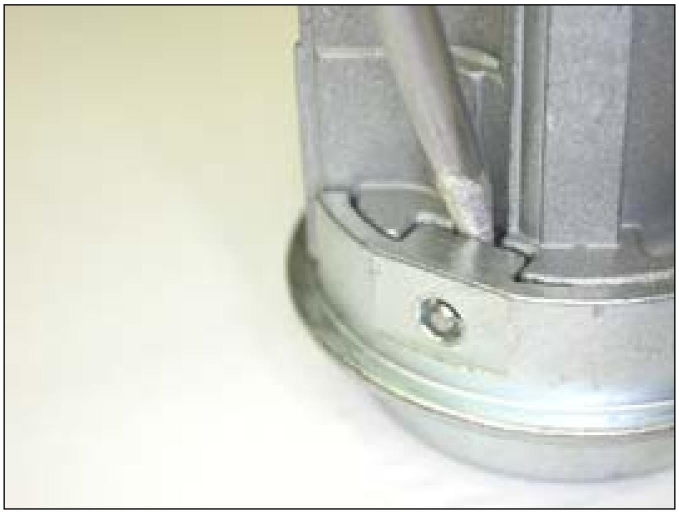
31. The ignition lock found on the 2004 Toyota Solara is similar to many others found on today's Toyota and Lexus vehicles. The most significant design development with this new generation of ignition lock has been the introduction of the improved hardened face cap that is secured by three solid roll-pins. With one trick, disassembly is pretty simple.

The first step is to remove the three solid roll-pins that secure the hardened face cap to the lock housing.



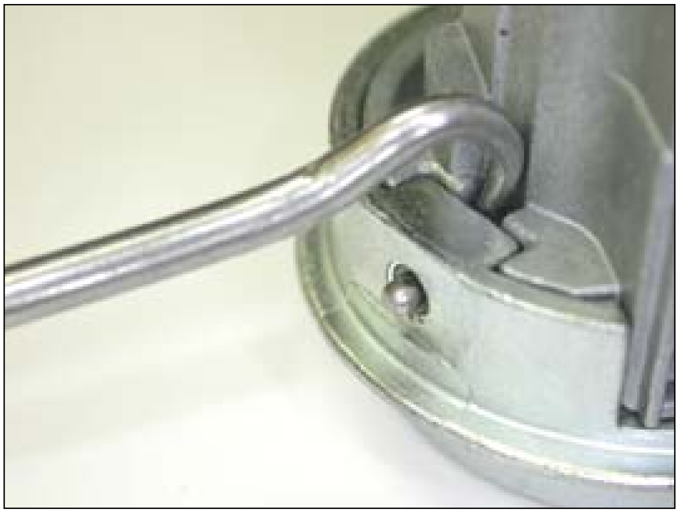
32. Two of the roll pins are fairly easy to remove. Insert a sharpened drift punch between the lock housing and the back of the roll-pin at an approximate angle of 55 degrees. The idea is to get the punch to make contact with BACK of the roll-pin and push it forward.

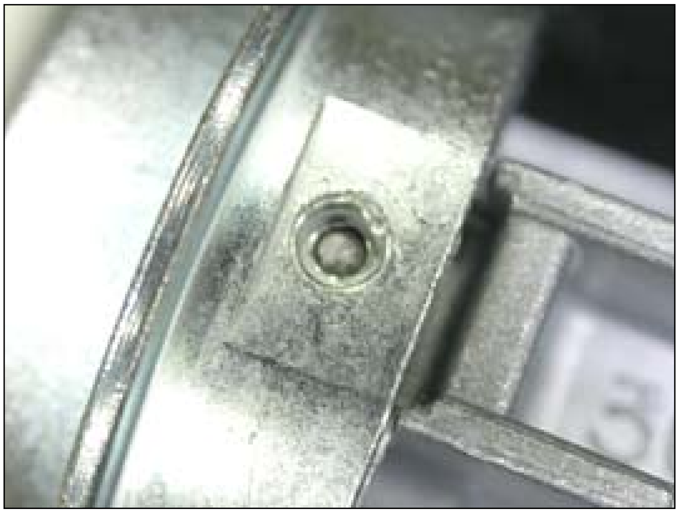




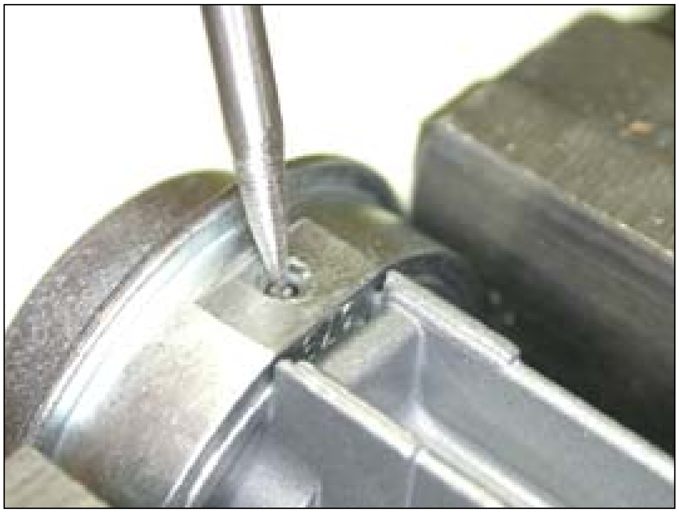
33. Hit the punch sharply with a hammer. The punch should push the roll pin slightly forward. Note the position of the roll-pin as it has been pushed forward.

34. Next, insert a hook pick behind the roll-pin and push it out further. You don't need to remove the pins completely, just push them out enough so they have clearance over the lock body housing when the face cap is removed.

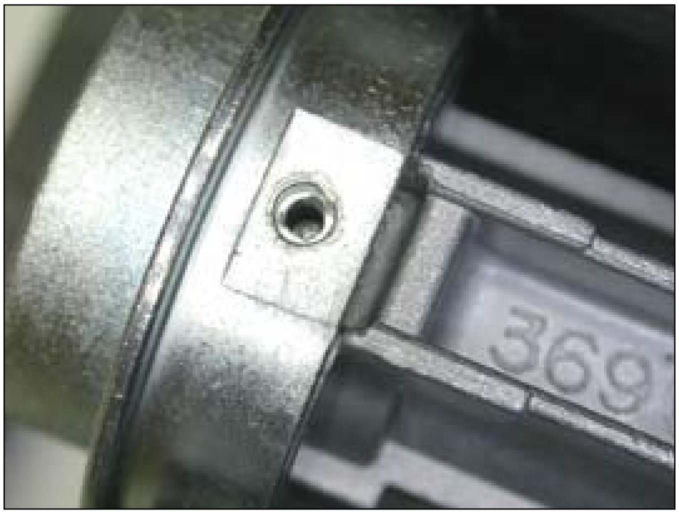




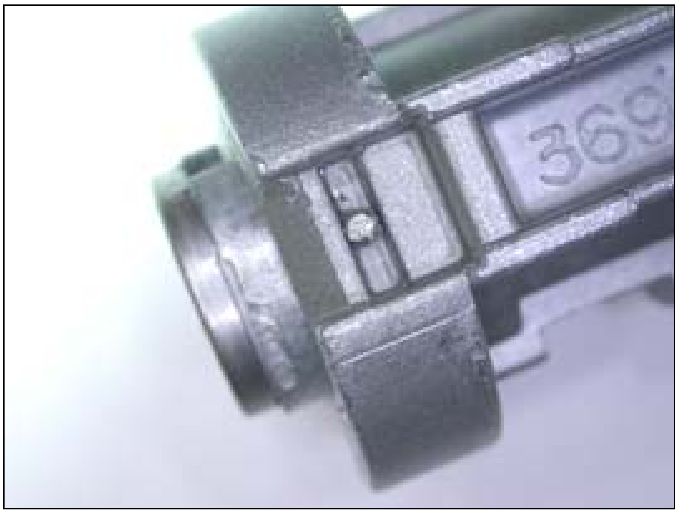
35. The third roll-pin, located at the 6 o'clock position is a little more difficult to remove because there is no easy way to push it out from the back.



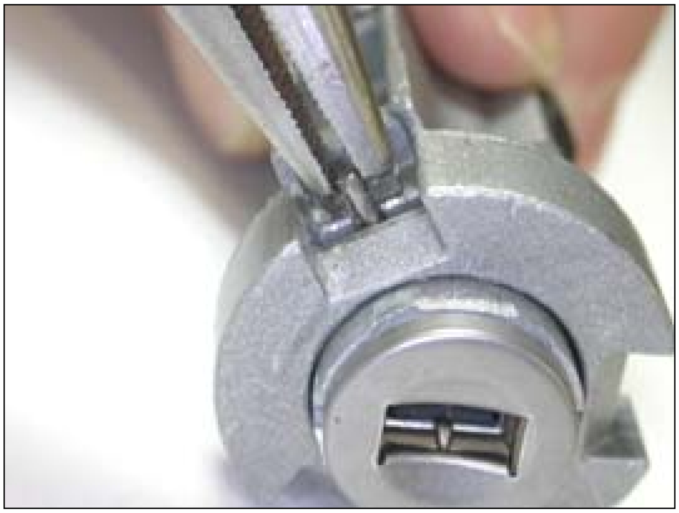
36. After securing the lock HORIZONTALLY in a vise, use a drift punch and a hammer to PUSH this pin DOWNWARD into the softer metal of the lock housing.



37. You will be able to feel the pin "sink" into the housing. Don't go crazy, you just need to push it down far enough to allow clearance for the face cap to come off.

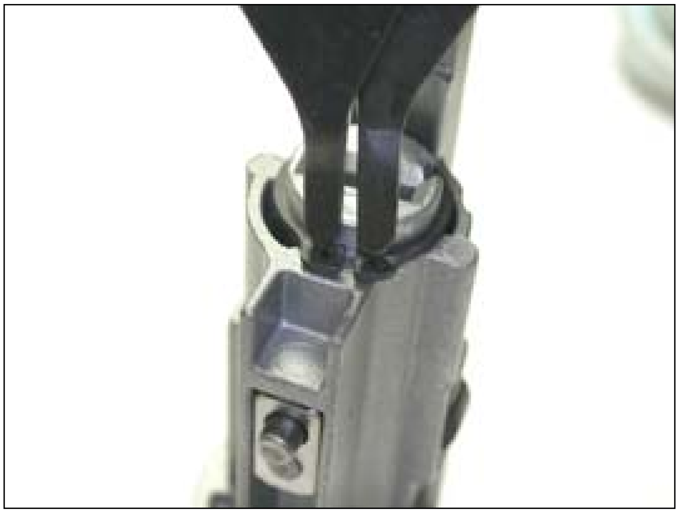


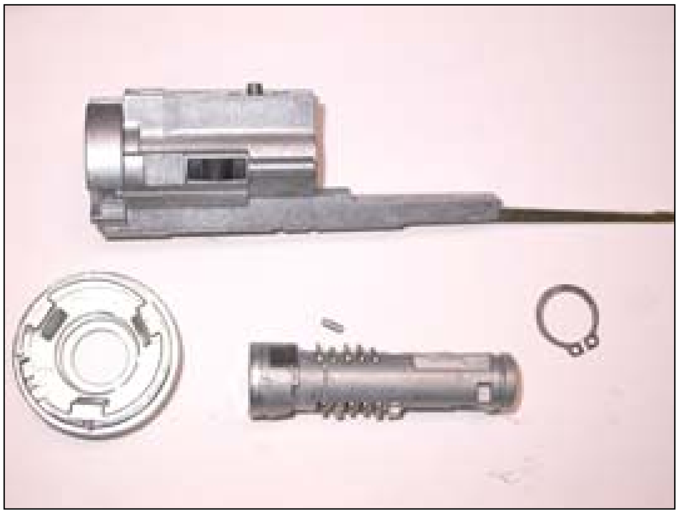
38. After this third pin is pushed down the face cap will easily come off the front of the lock.



39. Use pair of long nose pliers to remove the remaining pin. It will come out easily.

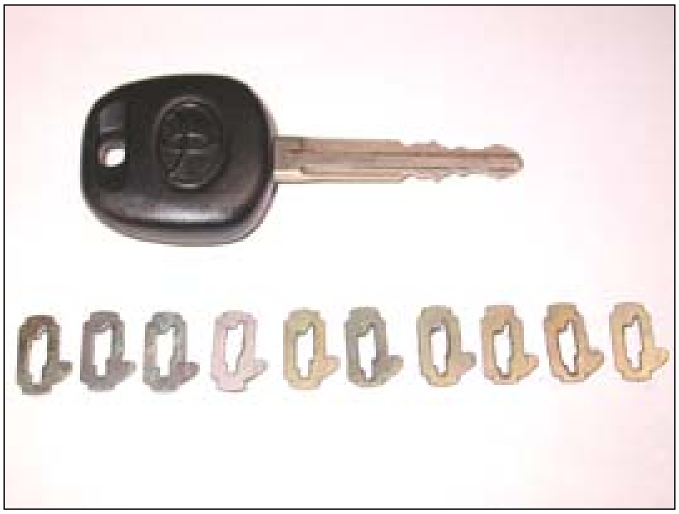
40. Use snap-ring pliers to remove the tru-arc ring at the rear of the cylinder.



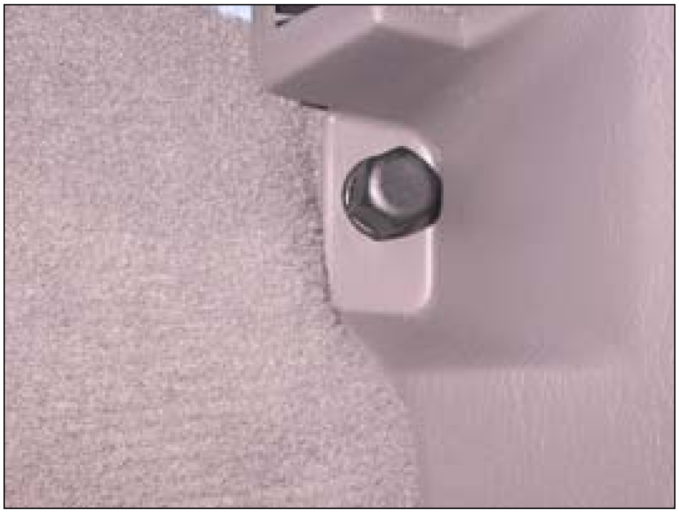


41. The lock cylinder will now come out the front of the lock. The ignition lock is shown disassembled.

42. All 10 wafers are found in the ignition.

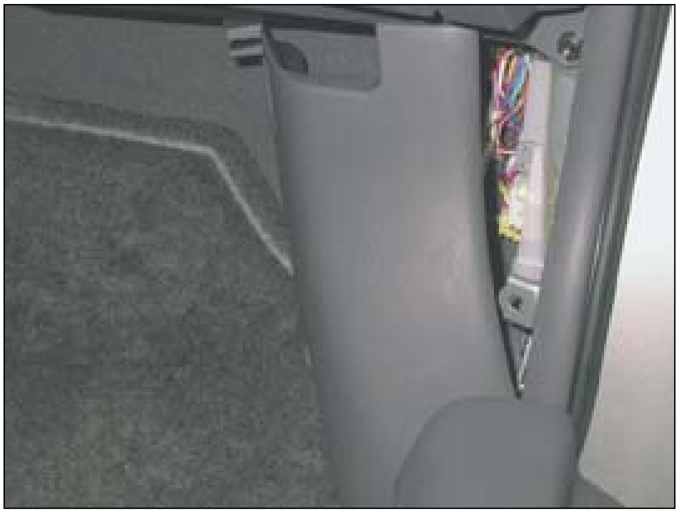


Removal of the Immobilizer ECU and Registration



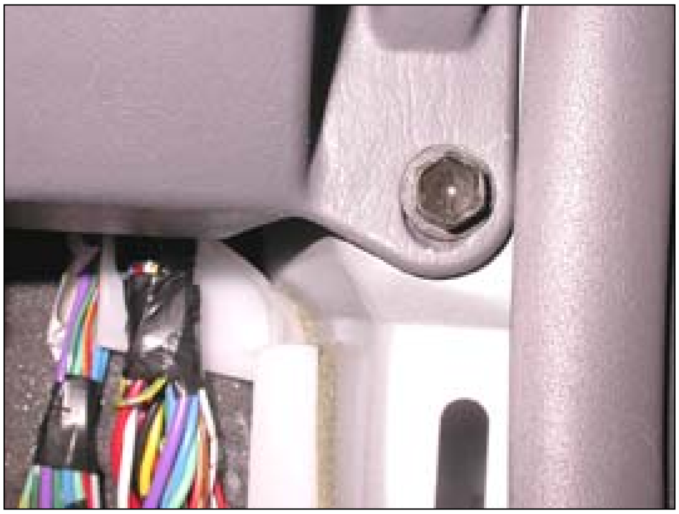
43. If all keys are lost for this vehicle, you can generate a working key if you replace or reset the separate Immobilizer ECU (located above and behind the glove-box, Toyota part # 89780-AA010) and registers a new dealer key (Toyota part # 89785-08020) to the new or reset Immobilizer ECU. It still must be synched to the Engine ECU, but this can be done easily.

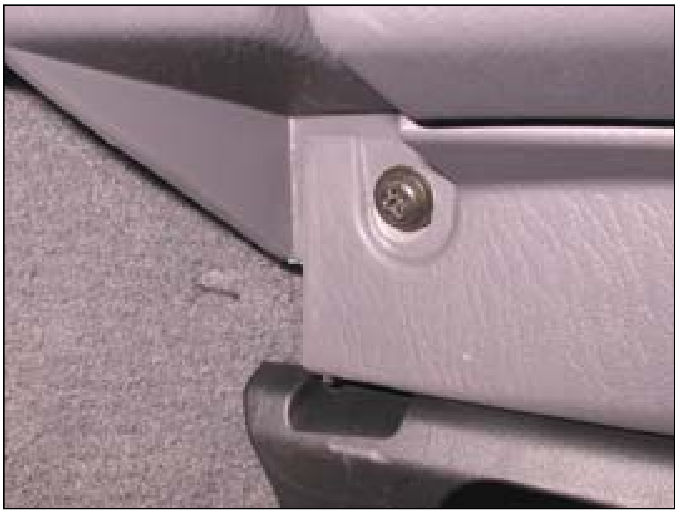
The separate Immobilizer ECU is located behind the glove box. You will need to remove the glove box to gain access to the Immobilizer ECU. Begin by removing the plastic nut that secures the trim piece to the car frame below the right side of the glove-box.



44. Next, remove the trim piece.

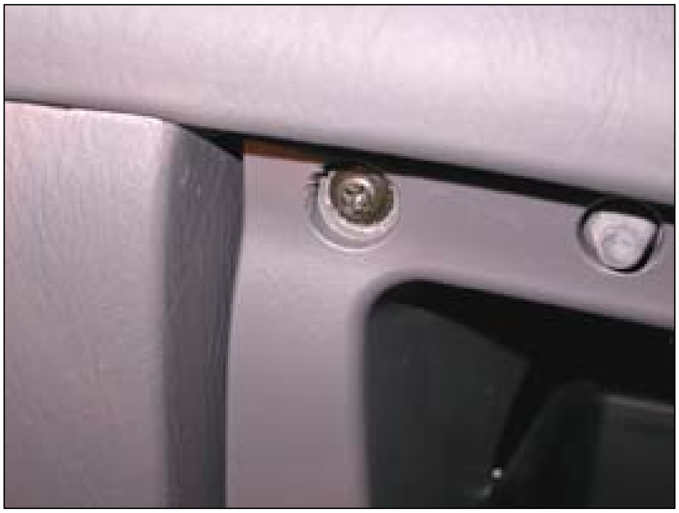
45. Now remove the 10mm bolt that secures the lower right side of the glove box to the vehicle frame.



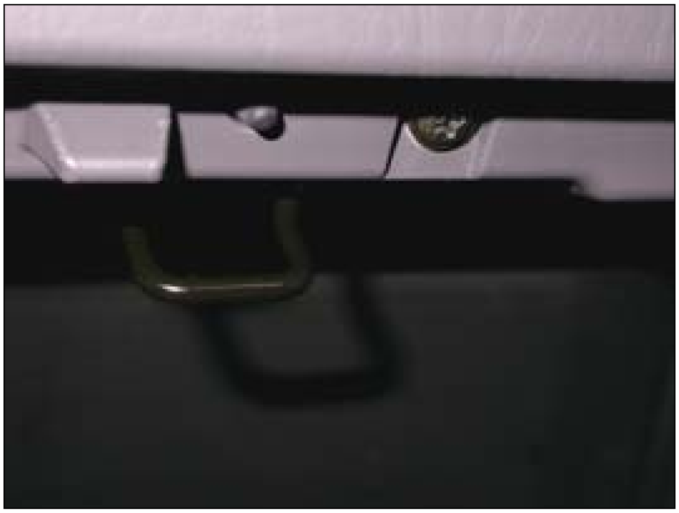


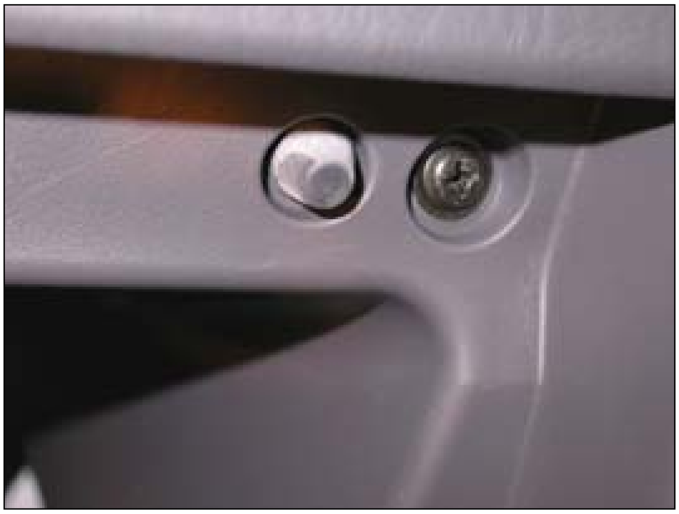
46. Next, remove the Phillips screw securing the lower left corner of the glove box.

47. There are three Phillips screws on the upper edge of the glove-box assembly. Remove the left corner screw.



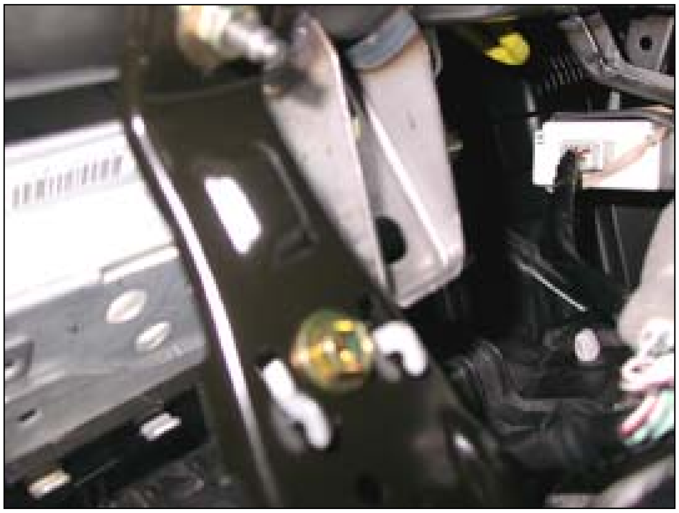
48. Next, remove the middle screw, directly to the right of the glove-box strike.



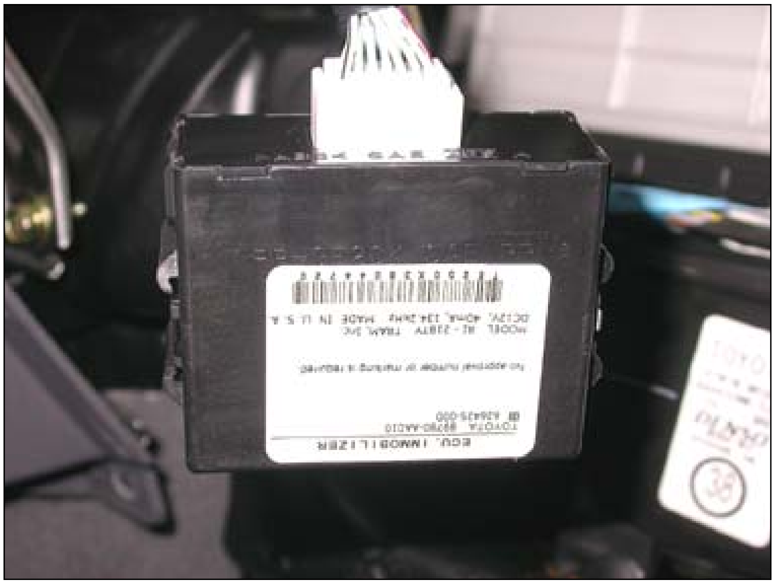


49. Finally, remove the glove-box assembly's right upper-corner screw.

50. You can now remove the entire glove-box.



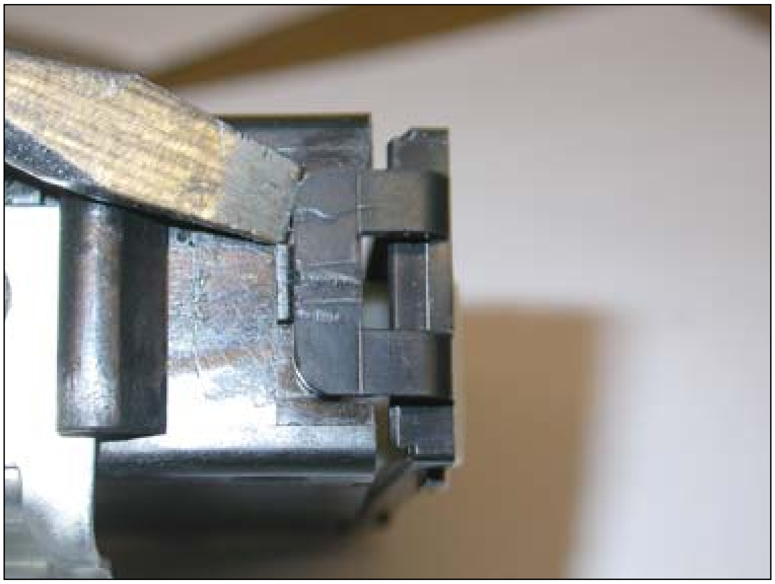
51. With the glove-box removed, you will now be able to remove the Immobilizer ECU.



52. The Immobilizer ECU is located on top of the same bracket that holds the glove-box strike. This bracket is welded perpendicular to a large body-rigidity bar that runs the horizontal width of the vehicle. There is a single 10mm bolt that holds this Immobilizer ECU to the TOP of this smaller bracket.

53. The Immobilizer ECU removed.

Resetting the Immobilizer ECU using the F.U.B.N.

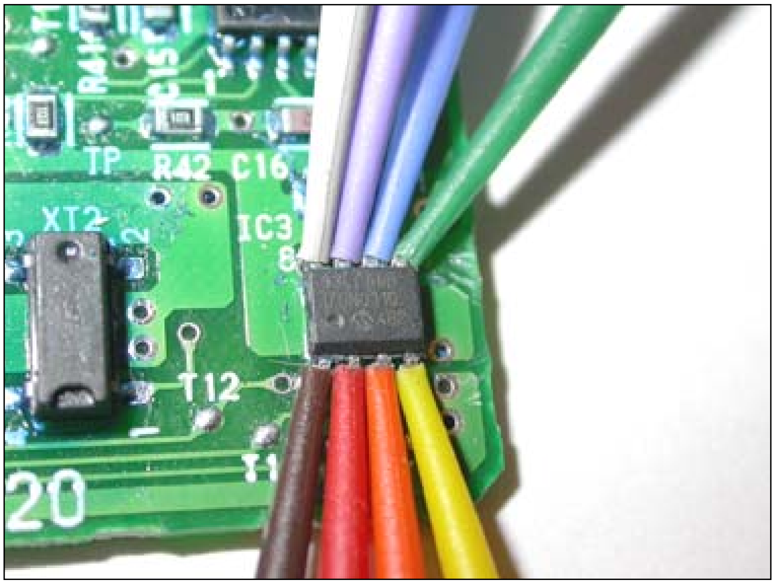


54. By resetting the Immobilizer ECU, you can return the unit to auto-learn status. It will automatically learn the next key after it is re-synchronized with the vehicle. Begin by prying off the cover.

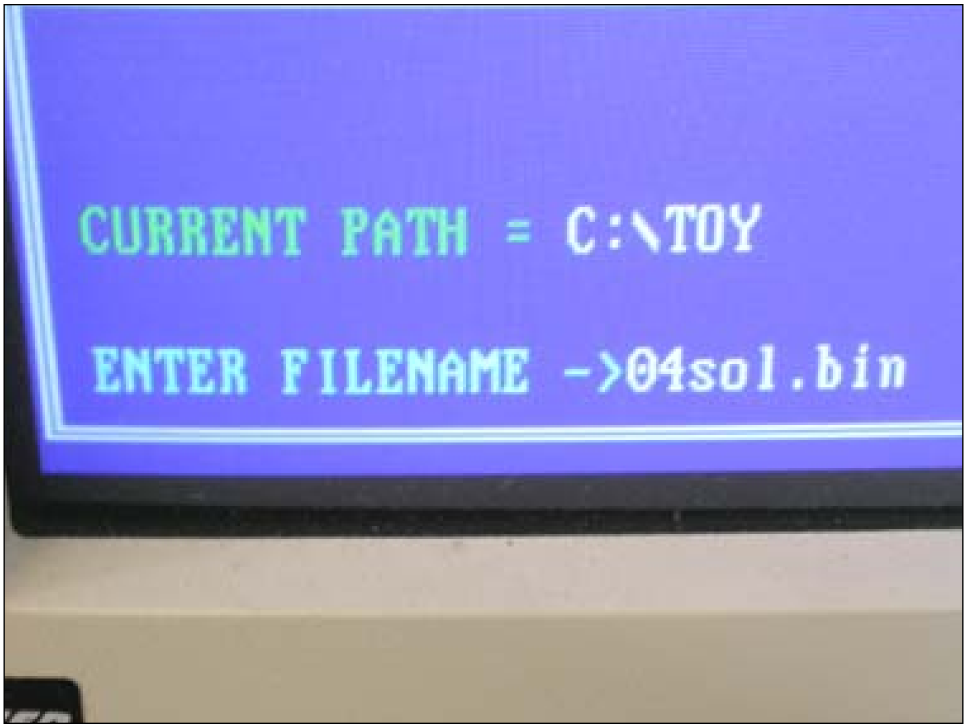
55. You can now remove the circuit board.

56. The Immobilizer ECU and all components.

57. The correct chip to reset is the IC3, chip type 93LC66.

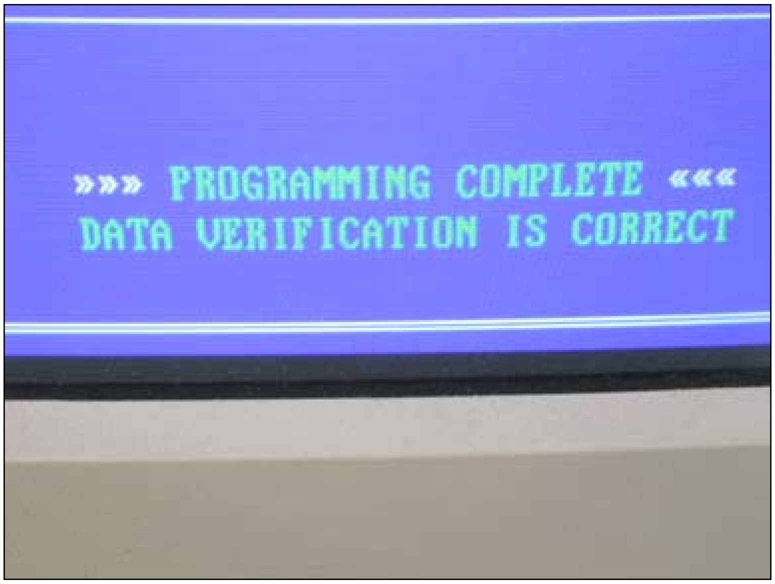


58. After you write the correct file (04SOL.bin) to the chip, the Immobilizer ECU will be restored to auto-learn mode.



```
CURRENT PATH = C:\TOY

ENTER FILENAME ->04sol.bin
```



```
»»» PROGRAMMING COMPLETE «««
DATA VERIFICATION IS CORRECT
```

59. The F.U.B.N. confirms the data was written to the chip correctly.

After installing a new or reset Immobilizer ECU, the following steps must be taken to synchronize the Immobilizer ECU with the Engine ECU Synchronization:

1. Using a piece of wire and connect terminal 4 (CG) and terminal 13 (TC) of the vehicle's OBD-2 connector.

2. Turn the ignition switch to the "ON" (do not start the engine) position for 30 minutes.

3. Turn the ignition "OFF" and remove the wire.

4. The car is now in Auto-Learn mode, the security light should remain on. (5505) Insert any keys you wish to register into the ignition key cylinder for one to two seconds, then remove. You can register the master and valet keys in any order because the ECU can differentiate between the different types of keys.

5. In this Auto-Learn mode the car will recognize 4 keys, 3 masters and 1 valet. If you want to register less than 4 total keys you can close the cycle by turning an already registered master key "ON" and "OFF" in the ignition 5 times in 10 seconds. A maximum of 5 master keys and 3 valet keys can be stored, but you need the scan tool to add these additional keys.

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